

THREE NEMATODE SPECIES (STRONGYLOIDEA : TRICHONEMINAE) FROM QUEENSLAND WALLABIES

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SUMMARY

This paper includes descriptions of a new genus and two new species, and a redescription of a known species; parasites and hosts are as follows: *Oesophagonastes gullardi* (Johnston and Mawson) from *Protemnodon bicolor*, *Rugopharynx rufogrisea*, n.sp., from *P. rufogrisea*, and *Pararugopharynx protemnodontis*, n.g., n.sp., from *P. rufogrisea*; all hosts are from Logan Village, Queensland.

INTRODUCTION

The nematodes described in this paper were collected by the Queensland Institute of Medical Research, and sent to the University of Adelaide for examination by Dr. M. J. Mackerras, then of that Institute. I am very grateful to Dr. Mackerras for the opportunity provided. Among these fresh and well-preserved specimens it has been possible to identify one previously described species, and two new species, for one of which a new genus, *Pararugopharynx*, is proposed.

The material is plentiful, and it has been possible to measure ten mature specimens of each sex for each species; these measurements are given in Table 1. The length of the vestibule and of the oesophagus is taken in each case from the anterior end of the worm to the base of the structure.

The material received came from seven specimens of *Protemnodon rufogrisea* (all of which were parasitised in the oesophagus as well as the stomach) and one specimen of *P. bicolor*, with nematodes in both oesophagus and stomach. All the hosts were from Logan Village, Queensland.

DESCRIPTIONS

The incidence of the species described in this paper is as follows:

Protemnodon rufogrisea (Desm.), *Rugopharynx rufogrisea*, n.sp. (oesophagus, one of seven hosts; stomach, seven of seven hosts); *Pararugopharynx protemnodontis*, n.g., n.sp. (oesophagus, two of seven hosts; stomach, three of seven hosts).

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Protemnodon bicolor (Desm.), *Oesophagonastes gallardi* (Johnston and Mawson) (oesophagus).

***Oesophagonastes gallardi* (Johnston and Mawson)**

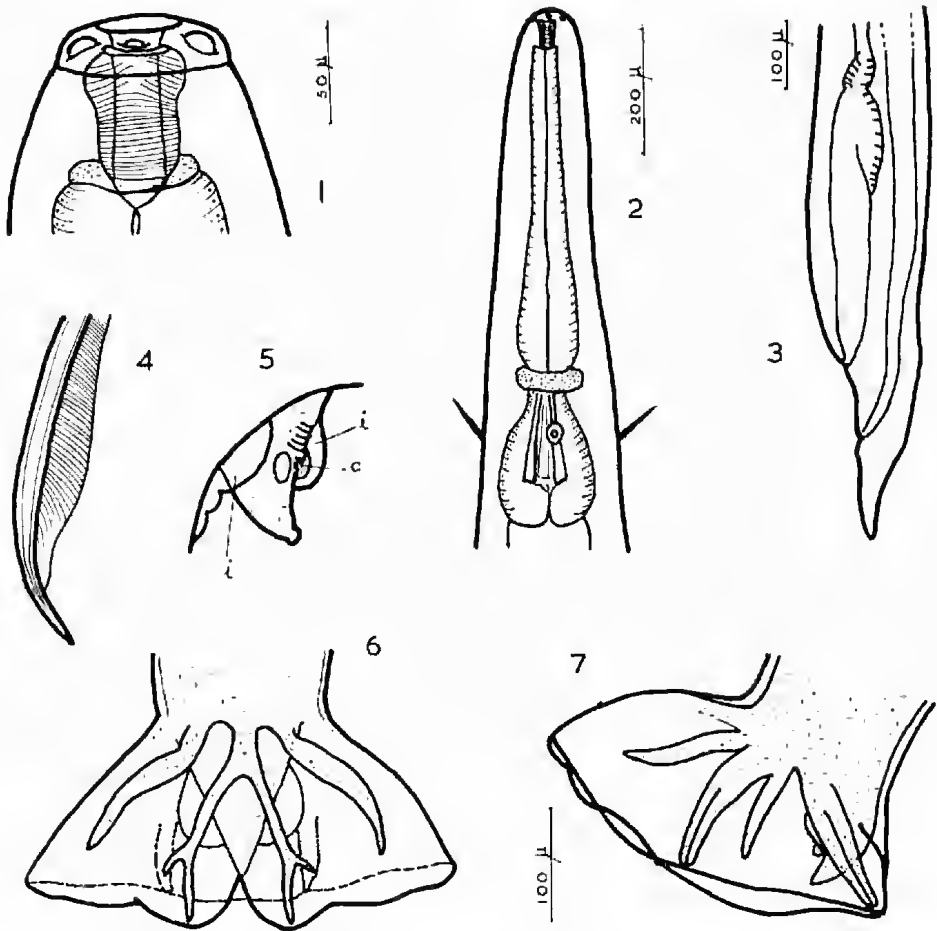
(Figs. 1-7)

Pharyngostromylus gallardi Johnston and Mawson, 1942, 110.

Spirostrongylus gallardi (Johnston and Mawson), Mawson, 1955, 2.

Host and Locality—*Protemnodon bicolor* (syn. *Macropus uallabatus*), Logan Village, Queensland. *O. gallardi* is now identified in fresh material from the type host, and it is possible to give a fuller description.

Relatively large worms, often curved in two spirals; cuticle transversely striated. Mouth with six shallow lips, the 2 lateral with amphids and the 4 submedian ones with simple papillae. Vestibule elongate, thick-walled with



Figs. 1-7. *Oesophagonastes gallardi*. 1, head; 2, oesophageal region; 3, tail of female; 4, distal end of spicule; 5, genital cone; 6 and 7, dorsal and lateral views of bursa. c, cloaca; i, inflated cuticle. Figs. 6 and 7 to same scale.

fine annular striae except anteriorly where walls are thicker and striae not annular. Anterior three-quarters of oesophagus, in front of constriction, is wider in second half; terminal bulb oval. Thick cuticular ring (typical of genus) between oesophagus and vestibule. Nerve ring at oesophageal constriction; stout hair-like cervical papillae in region of bulb, and excretory pore at level of anterior part of bulb.

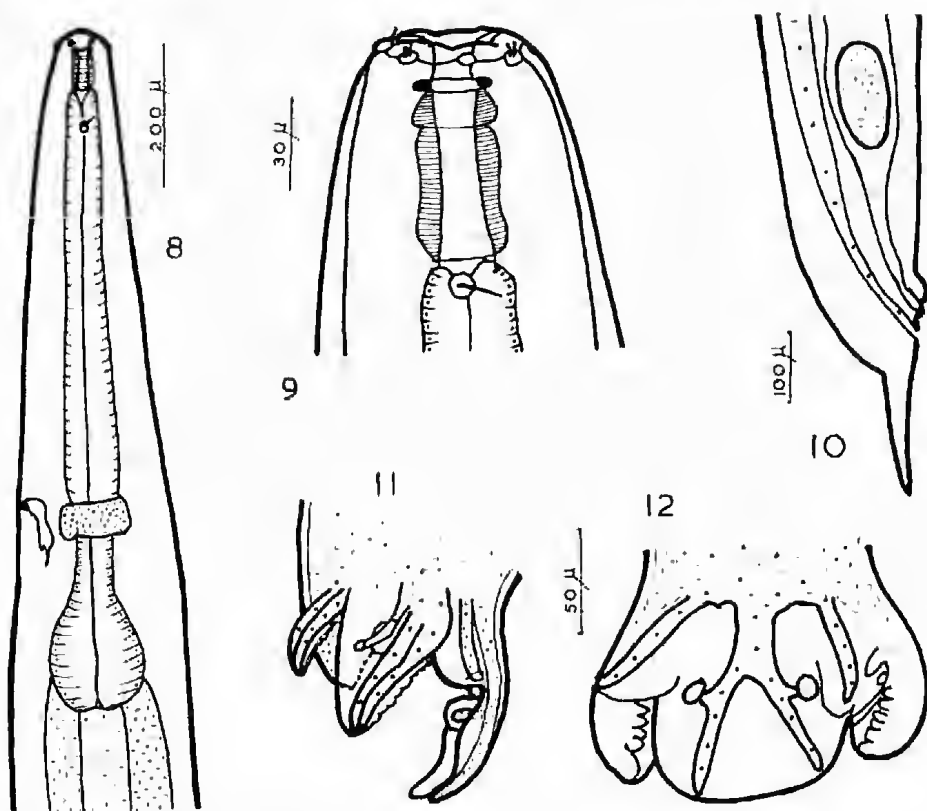
Bursa not deeply lobed, ventral lobes joined; bursal rays as in Figs 6 and 7. Slight inflation of inner wall of bursa at each side of genital cone (Fig. 5). Gubernaculum present; spicules alate nearly to pointed tips. Tail of female conical; eggs 65-95 μ by 40-55 μ .

Rugopharynx rufogrisea n. sp.

(Figs. 8-12)

Host and Locality—*Protemnodon rufogrisea*, Logan Village.

Short straight worms; submedian cephalic papillae with bifid setae; amphids distinct; buccal capsule short. Vestibule elongate, lumen cylindrical, wall narrowed at annular constriction at end of first quarter of its length; striations in wall radial, finer anterior to constriction.



Figs. 8-12. *Rugopharynx rufogrisea*. 8, oesophageal region; 9, head; 10, tail of female; 11 and 12, lateral and dorsal views of bursa. Figs. 11 and 12 to same scale.

Anterior part of oesophagus about three-quarters its length, followed by constriction and rather elongate terminal bulb. Nerve ring at constriction and excretory pore at about same level; cervical papillae close to posterior end of vestibule.

Body of female narrows sharply, especially dorsally, behind anus, to end in distinctive narrow tapering tail. Eggs 140-160 μ by 70-80 μ . Bursa heavily papillated except on dorsal lobe. Arrangement of rays shown in Figs. 11 and 12. Spicules with rounded tips alate nearly to end.

The species is close to *R. australis* Mönnig; it is distinguished from it by the shape of the vestibule and the position of the cervical papillae, and in the female by the very distinctive shape of the tail.

Pararugopharynx n. gen.

Trichoneminae: short straight worms, four setiferous submedian cephalic papillae, external leaf crown of ten bulbous elements, buccal capsule short, vestibule longer, annulated; oesophagus of two parts, anterior longer, almost cylindrical, separated by constriction from posterior part with terminal bulb; nerve ring at oesophageal constriction, excretory pore and stout hair-like cervical papillae about level of oesophageal bulb. Male: bursa entire, lobes poorly separated, longer dorsally; ventral rays together, to edge bursa, ventrolateral ray short, medio- and postero lateral rays together, to edge bursa; externo-dorsal ray short, separate; dorsal ray stout, bifurcates proximal to midlength, giving off two short branches before bifurcation; gubernaculum present; spicules long, stout, alate nearly to tips; genital cone surrounded by lobes of cuticle forming an "internal bursa". Female: tail elongate, vulva shortly in front of anus, vagina long. Parasites of wallabies.

Type Species—*P. protemnodontis*, n.sp.

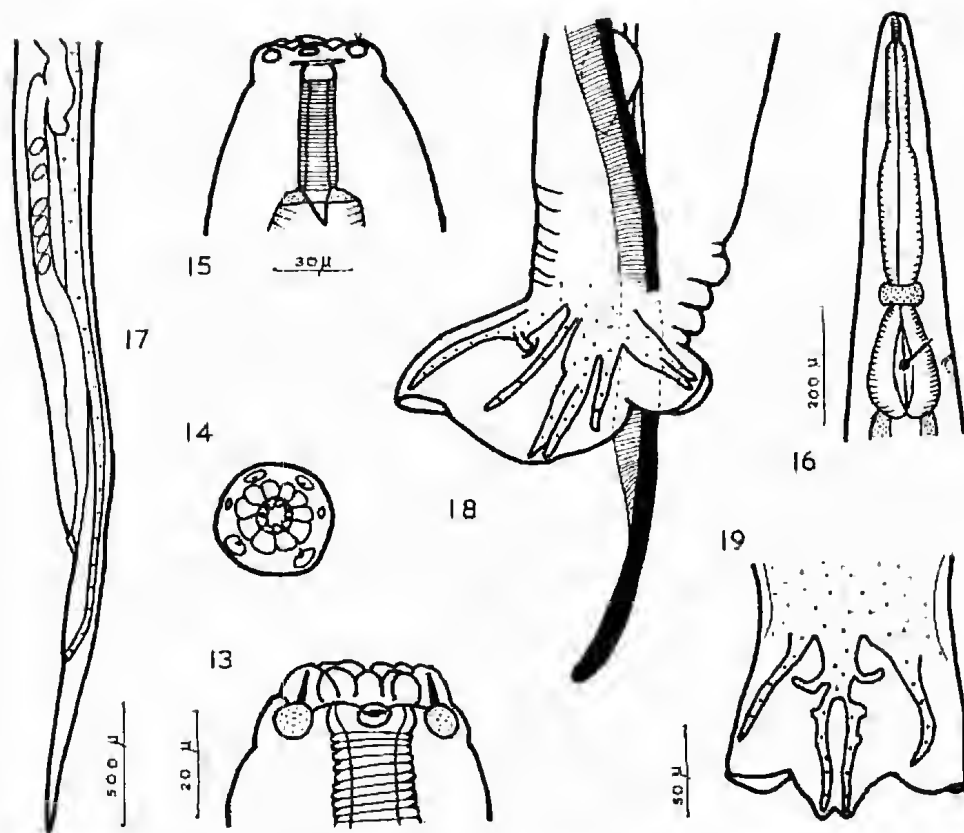
This genus is close to *Oesophagonastes* Mawson (1964, in press). It differs from it in the presence of a leaf crown, the form of the dorsal ray, and the presence of an "accessory bursa" around the genital cone.

Pararugopharynx protemnodontis n.g., n.sp.

(Figs. 13-19)

Host and Locality—*Protemnodontis rufogrisea*, Logan Village, Queensland.

Short straight worms, cuticle transversely striated. Leaf crown of ten rounded elements. Four submedian papillae with bifid setae; amphids distinct on lateral cuticular elevations. Buccal capsule well developed, slightly convex in longitudinal section. Anterior to buccal capsule is shallow cuticular ring, very like buccal capsule of *Rugopharynx* spp. Vestibule cylindrical, coarsely and regularly annulated. Oesophagus consists of long anterior part separated by constriction from elongate terminal bulb; anterior part narrower in first half of its length than in second half. Nerve ring at oesophageal constriction; excretory pore and hair-like cervical papillae in region of bulb.



Figs. 13-19. *Pararugopharynx protemnodontis*. 13 and 14, lateral and en face views of head; 15, anterior end; 16, oesophageal region; 17, tail of female; 18, posterior end of male, lateral view; 19, dorsal view of bursa. Figs. 14 and 15 to same scale; Figs. 18 and 19 to same scale.

Bursal lobes hardly distinct, ventral lobes joined. Rays as in Figs. 18 and 19. Cuticle around genital cone lobed, forming a type of accessory bursa. Gubernaculum present, resembling that in *Rugopharynx* spp. Spicules stout, alae extending nearly to tips.

Posterior end of female narrows distal to vulva, tail hardly tapering, ending in blunt point. Eggs about $100\ \mu$ by $50\ \mu$.

The species resembles those of the genus *Oesophagonastes* in the shape of the oesophagus, in the position of the associated structures, and in the type of bursa. It is distinguished by the longer and more definite buccal capsule and the form of the dorsal rays, as well as by the presence of an "accessory bursa"; this latter structure is, however, present in *O. leptos* Mawson (in press).

REFERENCES

- JOHNSTON, T. H., and MAWSON, P. M., 1942: The Gallard Collection of Parasitic Nematodes in the Australian Museum. *Rec. Austr. Mus.*, 21 (2), pp. 110-115.
 MAWSON, P. M., 1955: Some Parasites of Australian Vertebrates. *Trans. Roy. Soc. S. Aust.*, 78, pp. 1-7.
 MAWSON, P. M., 1964: Notes on Some Nematode Species from Kangaroos and Wallabies, Including a New Genus and Three New Species. *Parasitology* (in press).